

We Claim:

1. A process for making a necked nonwoven web having improved cross-directional uniformity, comprising the steps of:

providing a nonwoven web having a central region and two edge regions;

passing the nonwoven web through a first nip having a first average surface velocity, and a second nip having a second average surface velocity higher than the first average surface velocity;

necking the nonwoven web between the first and second nips; and

selectively increasing the necking in the central region of the nonwoven web relative to the two edge regions, or decreasing the necking in the two edge regions relative to the central region.

2. The process of Claim 1, wherein the step of selectively increasing the necking in the central region comprises the step of reducing necking resistance in the central region relative to the two edge regions.

3. The process of Claim 2, wherein the step of reducing necking resistance in the central region comprises the step of selectively heating the central region.

4. The process of Claim 3, wherein the step of selectively heating the central region comprises the step of applying a hot air knife to the central region.

5. The process of Claim 1, wherein the step of selectively increasing the necking in the central region comprises the step of increasing necking force in the central region relative to the two edge regions.

6. The process of Claim 5, wherein the step of increasing necking force in the central region comprises the step of selectively increasing a distance traveled by the central region between the first and second nips, relative to a distance traveled by the two edge regions.

7. The process of Claim 6, wherein the step of selectively increasing the distance traveled by the central region comprises the step of passing the nonwoven web over a guide roller having a profiled outer surface.

8. The process of Claim 7, wherein the nonwoven web is passed over two guide rollers, each having a profiled outer surface.

9. The process of Claim 1, wherein the step of selectively decreasing the necking in the two edge regions comprises the step of selectively chilling the two edge regions.

10. The process of Claim 1, further comprising the step of heating the entire nonwoven web between the first and second nips.

11. The process of Claim 1, wherein the second average surface velocity is about 1.05-1.7 times the first average surface velocity.

12. The process of Claim 1, wherein the second average surface velocity is about 1.1-1.5 times the first average surface velocity.

13. The process of Claim 1, wherein the second average surface velocity is about 1.2-1.4 times the first average surface velocity.

14. A necked nonwoven web having a length which is at least about 1.2 times an initial pre-necked length, the necked nonwoven web comprising:
two edge regions having an average basis weight; and
a central region having an average basis weight within about $\pm 7\%$ of the average basis weight of the two edge regions.

15. The necked nonwoven web of Claim 14, wherein the average basis weight of the central region is within about $\pm 5\%$ of the average basis weight of the two edge regions.

16. The necked nonwoven web of Claim 14, wherein the average basis weight of the central region is within about $\pm 3\%$ of the average basis weight of the two edge regions.

17. The necked nonwoven web of Claim 14, comprising a necked spunbond web.

18. The necked nonwoven web of Claim 14, comprising a necked meltblown web.

19. The necked nonwoven web of Claim 14, comprising a necked spunbond-meltblown-spunbond web laminate.

20. A neck-bonded laminate comprising a necked nonwoven web of Claim 14, and an elastomeric film.

21. A neck-bonded laminate comprising two necked nonwoven webs of Claim 14, and an elastomeric film.

22. A process for making a laminate having improved cross-directional uniformity, comprising the steps of:

providing a first nonwoven web having a central region and two edge regions;

necking the first nonwoven web between first and second nips, and selectively varying the necking in the central region of the necked nonwoven web relative to the two edge regions, by increasing the necking in the central region or decreasing the necking the edge regions, to form a first necked nonwoven web; and

combining the first necked nonwoven web with an elastomeric or extendible film.

23. The process of Claim 22, further comprising the steps of:

providing a second nonwoven web having a central region and two edge regions;

necking the second nonwoven web between two nips, and selectively varying the necking in the central region of the second nonwoven web, to form a second necked nonwoven web; and

combining the second necked nonwoven with the film.

24. The process of Claim 22, wherein the first nonwoven web and the film are combined in the second nip.

25. The process of Claim 23, wherein the two nips comprise a third nip and said second nip, and the first and second necked nonwoven webs are combined with the film in the second nip.

26. The process of Claim 22, wherein the step of selectively varying the necking in the central region relative to the edge regions comprises the step of selectively heating the central region.

27. The process of Claim 26, wherein the step of selectively heating the central region comprises the step of applying a hot air knife selectively to the central region.

28. The process of Claim 22, wherein the step of selectively varying the necking in the central region relative to the edge regions comprises the step of selectively chilling the edge regions.

29. The process of Claim 22, wherein the step of selectively varying the necking in the central region relative to the edge regions comprises the step of selectively increasing a distance traveled by the central region between the first and second nips, relative to a distance traveled by the two edge regions.

